

THE RELATIONSHIP BETWEEN PERSONALITY TYPE AND LEARNING ACHIEVEMENT AMONG ADVERTISING STUDENTS AT ASSUMPTION UNIVERSITY OF THAILAND

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Abstract: There have been several studies focusing on the relationship between personality and learning. However, there have been no studies which have looked specifically at the relationship between personality types (introversion and extraversion) and learning achievement in Thailand. This research sought to redress that lack. As well, although it is likely that personality differences affect learning achievement among individuals, it is also worth investigating whether personality differences interact with differences in course type (lecture-based or practice-based) to produce different learning outcomes. Therefore, the researcher examined the relationship between personality types and learning achievement in lecture-based and practice-based courses by using Jung's personality type theory as a framework. The surveys were distributed to 107 fourth year students in the Department of Advertising, Albert Laurence School of Communication Arts, and Assumption University of Thailand. The researcher used descriptive analysis to gather data about the personality types and learning achievement in different types of courses. Correlational analysis was then used to investigate possible the relationships among the variables. The analysis revealed that none of the research sample was introverted. In terms of learning achievement, all courses were in a similar grade range and there was no significant relationship between the personality types (either introverted or extraverted) and learning achievement in the two different types of courses (lecture-based and practice-based).

Keywords: Personality Types, Learning Achievement, Extraversion, Introversion, Lecture-Based Course, Practice-Based Course

Introduction

Personality influences people to prefer different things, react differently and make different decisions. This is true for minor things like the music one prefers to important things like the career one wants in the future (Cherry, 2012). Personality can also influence the way an individual learns as well. Many studies have found that there is a significant relationship between student learning style and personality. For example, the study of Busato, Prins, Elshout and Hamakera (1998) showed that persons with extraverted personalities will have a positive correlation with the direct learning styles while other personalities correlate with other learning styles. The study of Engleman, Voytecki, Jeffs, and Zambone (2009) also indicated persons with different personalities had different learning styles. Only those who had the same personalities shared the same styles. Another study from Raad and Schouwenburg (1996, cited in Heinström, 2000) showed that personality can affect learning style, which in turn affected learning strategies and, eventually, produced a particular learning outcome (see Figure 1).

If personality is important and affects student learning achievement, will it be the same in every course since individual courses in a curriculum are also varied, just like personality? Each course has its own characteristics basing on the lecturers, course description, objectives and credit structures. So there might be a possibility for student learning achievement to vary from course to course based on the different course characteristics.

Additionally, although a great deal of research has been done on the relationship between personality and learning achievement, the researcher was unable to locate any studies which investigated the relationship between personality types (introversion and extraversion) and learning achievement in Thai

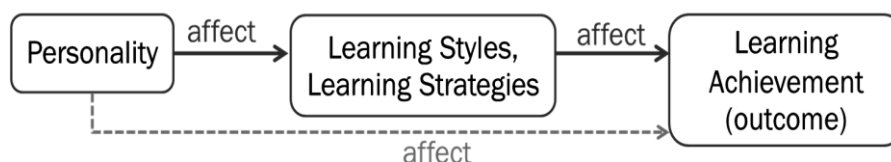


Figure 1: Relationship between Personality and Learning Achievement

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education. Specifically, there have been no studies which examined the students in the Department of Advertising, Albert Laurence School of Communication Arts, and Assumption University of Thailand. So this study is the first to focus on the relationship between personality types and learning achievement of students in the Department of Advertising, Albert Laurence School of Communication Arts, and Assumption University of Thailand.

Literature Review

Personality type is not new in psychology, but most people are more familiar with personality trait. Both type and trait are personality theories. However, the difference lies in the way they measure personality. Personality *type* theory classifies people into types, or categories, to be all or none, to be one or another. On the other hand, personality *trait* theory refers to relative degrees of personality orientation in specific contexts. Traits are durable personality characteristics which range along a continuum, e.g., low, medium or high, whereas types are collections of traits that occur together to define a personality category (Wayne State University, 2013). In this study, the researcher emphasized personality types.

The modern theory of personality type was developed by Swiss psychiatrist Carl Jung. It derived from Jung's fascination toward the unconscious mind (Boeree, 2006; Vernon, 2011). His fancy brought the theory of personality types to the modern analytical psychology and created a widespread practice for the business world, in terms of recruitment, understanding of brands, and insight into consumer behavior (Vernon, 2011).

Wicklein and Rojewski (1995), reviewed several studies which showed that personality type affected the way people learn, teach, and set and achieve goals. Elias and Stewart (1991, cited in Wicklein & Rojewski, 1995), and Foster and Horner (1998, cited in Wicklein & Rojewski, 1995) said that in terms of education, personality type can affect the way teachers teach, the way students learn, and also the way people communicate and work in teams. McCaulley (1980, 1976, cited in Wicklein & Rojewski, 1995) found in his research with over 3,000 respondents that the

students, who majored in engineering, shared the same types when compared to students from other majors. Barrett (1981, 1985, cited in Wicklein & Rojewski, 1995) also found similar results. He found that in teaching vocational-related courses, a specific type had less difficulty in achieving a high score. Brightman (2003) also found that extraversion was the personality type that business undergraduates shared in common while for the university faculty, the majority was introverted. The study of Hudthasak and Ithipathanun (2004) showed that there was a significant difference in personality types of students in different schools in Bangkok University.

Jung, who brought the theory of personality types to modern analytical psychology, is considered one of the iconic psychological theorists (Bowdon, 2007). Jung (1923, 1991) believed that each individual is born with an unconscious psychological adaptation to perform. Twins can be completely different types of people, ignoring other external influences. Jung believed that it was very important to know personality so that an individual can adapt to the world and successfully orient their life. If a person is forced to think or act in ways that he was not naturally born to, it could result in neurosis or mental illness later. Hence, Jung developed the theory about the personality types by grouping people into two main types according to the way they determined essential decisions and actions in their lives. One was called "extraverted type" and the other was called "introverted type." Jung put introversion and extraversion as the first concern to classify individuals as an attitude a person has toward the world (Aiken, 1993). However, under each type, there were four categories which worked as functions (Kline, 2004). Jung (1923, 1991) stated four preference functions to perceive information and to make a decision: these were sensation, intuition, thinking and feeling. All four functions can be paired with either introversion or extraversion in order to describe a person with greater depth, and to have a complete understanding about what is his or her personality. So in Jung's theory, he stated 8 types of personality by having either introversion or extraversion, as a general attitude, matched with each of the 4 functions: sensation, intuition, thinking or feeling (see Figure 2).

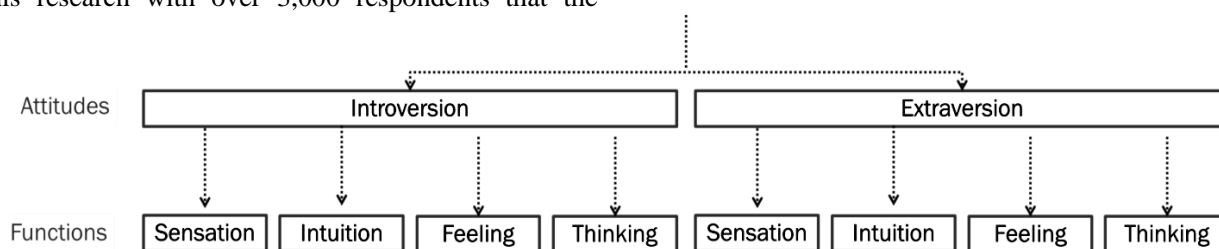


Figure 2: Jung's Types

Isabel Myers and her mother Katharine Cook Briggs, were drawn to Jung's theory. It inspired their interest to devote themselves to psychology. The idea first came from Briggs and later Myers took her mother's work and continued to study personality types. She finally was able to make psychological type theory practical, making it visible and measurable (Center for Applications of Psychological Type, Inc., 2013).

The set of questions that was used to measure personality type is called the Myers–Briggs Type Indicator or MBTI. During her investigation about Jung's theory, Myers found that there was another preference function that had not been identified by Jung, judging and perceiving. So she added judging and perceiving and put them in her developed theory (BSM Consulting, Inc., 2012). Hence from having 8 types of personality from Jung's theory, Myers came up with 16 types (see Figure 3).

other functions, he or she holds the real type as a dominant internal function (Pittenger, 1993).

Another person who studied and created the measurement for the personality type theory of Jung is Eysenck. Eysenck was a British psychologist who was born in Germany and became famous in England (Cherry, 2013; Notable Names Database, 2012; Plucker, 2012). He was influenced by Jung with the idea of introversion and extraversion. However, when Jung called them attitudes and said that they created different types, Eysenck called them *supertraits* and said that they created *categories* (AllPsych Online, 2011).

However, regardless of what he called introversion and extraversion, Eysenck created mathematical and specific classifications for introversion and extraversion (Columbia University Press, 2012; Boeree, 2009). When Myers introduced the MBTI there were many doubts since she had no

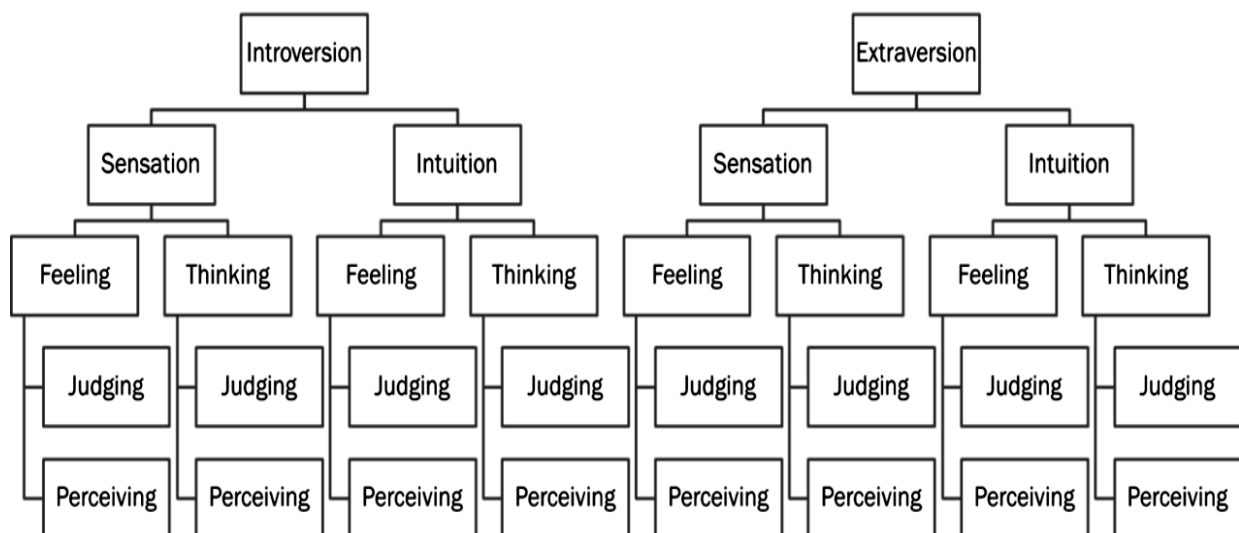


Figure 3: Myers' Types

According to Lawrence (as cited in Center of Applications of Personality Type, 2013), Jung believed that a person was born with a certain type ready to be discovered and given expression, and that cannot be changed. MBTI advocates said, however, that the results from the MBTI can be different from time to time for a person if he or she takes it more than one time. They believed that changes in the results can happen and it comes from the current situation of a person who takes the test (Aiken, 1993; Zemke, 1992). At a certain time, a person might find a particular preference becomes stronger or weaker, but, it could also be just the increasing or decreasing of familiarity with the non-preferences functions (Baron, 1998). Nevertheless, Jung and Myers expected that at the end, by adulthood, the reliability of the test-retest would be high because even if a person developed skill in using

recognized status in the psychological establishment (Bowdon, 2007), Eysenck introduced the test that measures only introversion, extraversion and neuroticism. So to be straight to the point, the researcher opted to utilize a test derived from Eysenck to be the measurement tool for this study.

In Jung's theory – to be a certain type – one attitude has to be defined as either introversion or extraversion; he called these the general attitude types, since they are distinguished by the flow of libido – the energy that is free and creative as Jung defined (News-medical, 2013) – and the direction of interest in general. For Myers's indicator (MBTI), even though she added and paired all the functions of Jung, introversion and extraversion were still there and a person had to be either one or another. For Eysenck as well, he added a new item to his theory (neuroticism), ignored all the

functions Jung introduced, but introversion and extraversion were still there.

Given the above, there is no doubt that introversion and extraversion are worth studying. In addition, extraversion is one of the fundamental dimensions of personality, which can explain a person's behavior. It also can be used to support explanation of a particular performance in a dynamic domain (Wilt and Revelle (2008). As well, the extraversion can be a tool to predict the possibility of the mental disorder (Wilt and Revelle (2008).

Knowing what general attitude type a person is, introversion or extraversion, can help people understand themselves and their behavior and also their future path. Brightman (2003) found that most business undergraduates were extraverts. This result was not surprising, he said, because the world of business always appreciates and rewards actions which concur with the extravert's strength.

Brightman (2003) explained that introversion and extraversion preferences helped people learn how they could recharge their own batteries, replenish their energy. It meant that the different preference between introversion and extraversion will have the different way and place to feel relaxed and comfortable. For introverts, they can enjoy being out with a lot of people, but they need quiet time to feel free and fully recharge their energy. They have a greater interest in their inner worlds of ideas and derive energy from intrapersonal interaction (Bowdon, 2007).

Jung (1923, 1991) differentiated introverted people from extraverted people by looking at their attitudes toward objects. Introverted people always pulled their libido from an object. They put their personal views between their action and objects, trying to avoid assumption of circumstances. Jung (1991) explained that sometimes people judged others as introverted because he or she was reflective and thoughtful; however, it was misleading. A thoughtful person can be either introversion or extraversion, with the certain function type. Most introverted people tend to be shy while most extraverted people tend to be sociable. So people frequently think that shyness and sociability are the main personality types. However, Boeree (2006) explained that for Jung, extraversion and introversion were not about shyness or sociability; they was about how often a person would like to engage with society and how often with his or her own unconscious, i.e., interpersonally.

Brightman (2003) explained extraverted people as people who were "on the fly" thinkers. They liked to interact with people and things, and express their impressions for others to know. Some extraverted people can be calm and go deep in their thoughts but, however, after long hours of doing that they needed to go have some fun in society to recharge their energies

(Jung, 1991). They get energy from interacting externally and see life in terms of the external world (Bowdon, 2007).

Jung (1923, 1991) said that extraversion always had a positive relationship with objects. Extraverted people value objective things and not, not subjective sensibility in their lives. Extraverted people tend to take immediate action. They adjust their behavior to fit themselves into their surroundings and do things to exceed the expectations of those around them. However, their internal personality remains unchanged.

In teaching and learning, Pittenges (1993) mentioned Blume's study that suggested learners should discover know their personality types in order to improve their study habits. Brightman (2003) stated that introversion and extraversion have different ways of learning, that extraverted people frequently have no idea that they may not understand a lesson unless they try to speak it out but they cannot. So to help extraverted students achieve their learning objectives, teachers should provide them with a break or activities to talk and discuss in class. On the other hand, introverted students will never think that they have learned something unless create a framework and integrate all the information into one big picture and see the relationship of the elements of the entire subject matter. For introverted people, the best way to lead them to achievement, then, is to give them time and teach them how to interconnect the knowledge and build a concept map. Therefore, it does not mean that those who dominate group discussions will always work harder or smarter, it can be assumed only that they are extraverted (Larkin & Powers, 2013). The study of the application of Eysenck theory (as cited in Schmeck & Lockhart, 1983) also stated that extraverted people will learn and understand the teaching materials better when they are in a very stimulating environment, like a group discussion, while introverted learners will learn best when they are in an environment that is quiet and free from strong stimulation. Given the importance of the learning environment, teachers should develop activities that allow extraverted students to use their energy and other activities to bring introverted learners out of their inner world (Scanlon, 2007).

As cited in Kline (2004), Cattell and Kline found that at different educational levels, different personality types got the best achievement. For primary school, mild extraversion was successful, while at the secondary and university levels, anxious introversion did best. The finding from Ghana, as cited in Kline (2004), also indicated that this finding applies not only in western countries but also in areas countries and cultures such as Africa and India.

In language learning oral tests, as cited in Qomarudin (2010), many studies have identified that

there is a significant relationship between introversion and extraversion, and the speaking skill. Qomarudin also mentioned that in learning a second language, there were a number of theories which showed that learning achievement of individuals can be affected by personality factors. Yang (2007) also supported that personality type, introversion-extraversion, can impact oral fluency in language learning.

However, there are a variety of factors that can affect students' achievement at school: parents' attitudes and peer's attitudes toward school; individual IQ; teacher quality; school quality; school climate and environment; learners' emotional problems (Kline, 2004). This raises the interesting possibility, as mentioned earlier, that different courses types might also affect student learning achievement.

Triandis and Suh (2002) noted that personality can be affected by nations and cultures. Therefore, it is appropriate that this study was conducted at Assumption University, the first international university in Thailand, where there are foreign students from up to 75 countries (Assumption University of Thailand, 2009).

The chosen school of this study was Albert Laurence School of Communication Arts which was established in 1992. There are 6 departments in the

department have to take them. The other 2 sections - *major elective or minor required courses* and *free elective courses* -, are those which students can choose within their school and university according to their own wishes. The number of courses per each section will be different according to each different school and department.

For this study, the researcher focused on *general education courses*, *core courses*, and *major required courses* that the sample had to take. For all 3 sections, there were 30 lecture-based courses and 11 practice-based courses.

Conceptual Framework

Personality can affect student learning achievement (Heinström, 2000) so this study investigated whether different personality types are related to learning achievement in different types of Advertising courses in Albert Laurence School of Communication Arts, Assumption University of Thailand.

The first variable was personality types which were introversion and extraversion. The second variable was student learning achievement in two different types of courses, which were lecture-based course and practice-based course (see Figure 4).

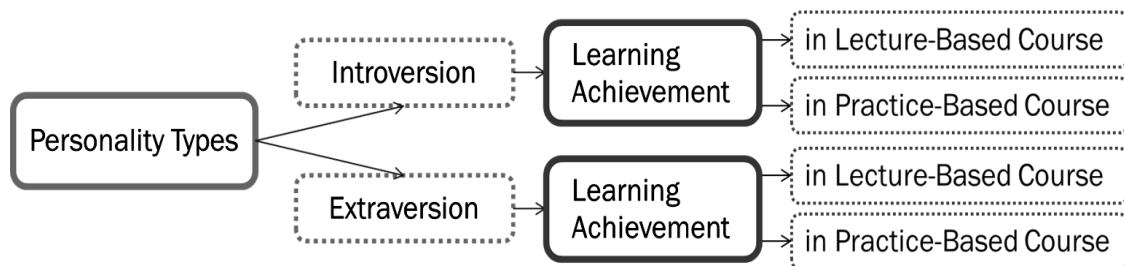


Figure 4: Conceptual Framework

School: Advertising, New Media for Communication, Performance Communication, Public Relations, and Visual for Communication Arts, Computer Generated Imagery, and Visual Communication Design (Albert Laurence School of Communication Arts, 2013). The researcher chose the Department of Advertising to be the population for this study.

All courses in every curriculum of Assumption University of Thailand are grouped into 5 sections: *general education courses*, *core courses*, *major required courses*, *major elective or minor required courses*, and *free elective courses*. The *general education courses* are those which all students in Assumption University of Thailand must take. *Core courses* are those provided by a particular school and which students who are registered in that school are required to take. *Major required courses* are provided by a particular department and all students in that

Methodology

This study used a quantitative descriptive-correlational research design to gather descriptive data about students' personality types and student learning achievement through the use of self-report surveys, and relied on the use of correlational analysis to determine if there was a relationship between extraverted and introverted personality types and student achievement in lecture-based courses and practice-based courses.

Population and Sample

The fourth year university students in the Department of Advertising, Albert Laurence School of Communication Arts, and Assumption University of Thailand were the population for this study. Whereas the purpose of this study was to examine the relationship between student personalities (introverted

and extraverted) and their achievement in lecture-based and practice-based courses, the researcher focused on the senior students who were expected to achieve at least 96 credits by their fourth year of study, in order to get the achieved grades from as many courses as possible. The population was those who have been studied in the fourth year of the Department of Advertising, Albert Laurence School of Communication Arts. So one hundred and seven numbers of the fourth year university students who were studying in the Department of Advertising, Albert Laurence School of Communication Arts, and Assumption University of Thailand in the academic year 2012 were chosen to be the sample for this study.

Research Instruments

A survey was used as the main instrument to measure the 2 variables – students' introverted or extraverted personality types, and student learning achievement in 2 different types of courses (lecture-based and practice-based). As a supporting instrument, the researcher identified the types of courses to be either lecture-based or practice-based by using credits structure given by the Albert Laurence School of Communication Arts, Assumption University of Thailand.

Assumption University of Thailand is an English medium university so English-only questionnaires were used. There were 3 sections in the survey. The first section concerned the general demographic information of the respondents. There were 3 questions about demographic variables, gender, age, and nationality.

The second section was a list of items to classify personality type as either introverted or extraverted. The section which classified the personality types used the question items derived from the works of Eysenck (McCroskey, 2007). However, to be more specific on the research objective that the researcher used the personality test to determine only introverted and extraverted personality, the scale that developed by McCroskey (based on Eysenck's work) was used. The test had 12 items. Each item was measured on a 5-point Likert scale, rating from 1 (strongly disagree) to 5 (strongly agree) with the item. McCroskey developed the scale by excluding the items that were not related to the introversion and extraversion dimensions. The correlation of this scale with the Personal Report of Communication Apprehension (PRCA-24) as a concurrent validity was .30 while the Cronbach's alpha which is used to see the internal reliability consistency in psychological measurement estimates was .80; it was considered as having a good consistency (Gliem & Gliem, 2003; McCroskey, 2007).

The third section collected the students' grades by use of the *Curriculum Report*. The curriculum report

was created based on the *Undergraduate Bulletin 2012-2013* by Assumption University of Thailand. The purpose is for the students with ID number 511-545xxx to check their achievement. It is normally used as a checklist or reassurance for the students to graduate. It showed all required courses that all students from the Department of Advertising had to take according to the curriculum.

The subjects were asked to fill in all grades (A, A-, B+, B, B-, C+, C, C-, D and F) they had achieved to show their learning achievement for each course. To assign a numerical value for the statistical analysis, the researcher found the mean of each range given. Hence, after the calculation, the numerical value for grade A was 95, grade A- was 87, grade B+ was 82, grade B was 77, grade B- was 72, grade C+ was 67, grade C was 62, grade C- was 57, grade D was 52, and grade F was 25.

Credit structure, the supporting instrument, is a number code which is used to tell the characteristic of each course. It was set and provided by the school and university for students to choose courses to enroll. They are various from university to university. So for this study, the researcher used the credit structure which was set by the Albert Laurence School of Communication Arts, Assumption University of Thailand, to classify the type of courses to be either lecture-based course or practice-based.

The lecture-based courses are courses which number of lecture hours (letter *b.*) higher than the number of laboratory/practice hours (letter *c.*) while the practice-based courses are courses which number of laboratory/practice hours is higher or equal to the lecture hours. For example, a course which had 3(3-0-6) was considered to be a lecture-based course and a course which had 3(2-2-4) was considered a practice-based course.

Collection of Data

The researcher began the collection of data by getting the permission from the chairperson of the Advertising Department to use name lists of 107 students who were in the fourth year of the academic year 2012.

One hundred and seven English version surveys were distributed to the students who were gathered into a room in the Albert Laurence School of Communication Arts building. They were asked to fill in the survey in a pen-and-paper form. During the process, the researcher was available in the room to answer questions about the survey. This process took approximately 30 minutes. Hence, all the data was collected within one day with a 100% return rate.

After that, all courses were classified into 2 types which were lecture-based courses and practice-based courses by using the credit structure given by the school and university in the student manual. All grades

which were given in letter form were converted to a numerical value as mentioned earlier.

Data Analysis

The researcher used *frequency* and *percentage* to analyze data from section 1 (general demographic), and used *frequency*, *percentage*, *mean* and *standard deviation* in section 2 (personality type). After the personality types and type of courses were classified, the researcher used *mean* and *standard deviation* to analyze the average grades students had achieved in section 3 (curriculum report).

Then the researcher used the analyzed information from section 2 and section 3 to find the relationship between the personality types (introverted and extraverted) and the student learning achievement in different type of courses (lecture-based and practice-based) by using Pearson product-moment correlation coefficient.

Findings

There were several research findings to the study analyzed by descriptive statistics. In term of demographics, the majority of the respondents was male (52%), aged between 19 and 29. Ninety-two percent was of Thai nationality.

In terms of personality types, Table 1 shows the proportion of 107 respondents' personality types. Almost all of the students (97%) were extraverted and the reminders (3%) were both introverted and extraverted. So it was clear that none of the research subjects were introverted ($SD = 4.51$).

Table 1: Proportion of Respondents' Personality Types

Personality Type	Frequency	%
Introverted Type (score more than 28)	0	0
Extraverted Type (score less than 20)	104	97.2
Both introverted and extraverted (score between 20-28)	3	2.8
Total	107	100.0

Table 2 shows average score of 2 types of courses that the subjects achieved. There were 30 average scores from all lecture-based courses, and 11 average scores from all practice-based courses. The average score for lecture-based courses was 73.94 ($SD = 7.33$), and 77.77 ($SD = 5.12$) for practice-based courses from

the score ranged between 25 and 95.

Table 2: Average Score of Learning Achievement in Lecture-Based and Practice-Based Course Types

	Minimum	Maximum	<i>M</i>	<i>SD</i>
Average score from lecture-based courses	60.68	94.47	73.94	7.33
Average score from practice-based courses	67.83	92.90	77.77	5.12

Pearson product-moment correlation coefficient was utilized to examine the relationship between personality type (introversion and extraversion) and student learning achievement (lecture-based and practice-based courses). Since there were no participants who had introverted personality type (as shown in Table 1), the researcher tested only the extraverted personality type and the learning achievement in the two types of courses.

The findings showed that there was no statistically significant correlation between extraverted personality type and learning achievement in either lecture-based courses or practice-based courses at $r(105) = .01, p > .05$ (see Table 3).

Table 3: Correlational Analysis of Extraverted Type and Lecture-Based Courses' Scores

	Extraverted personality types' scores	Average score from lecture-based courses
Extraverted personality types' scores	——	
Average score from lecture-based courses	.03	——

Note. *Correlation is significant at the 0.05 level (2-tailed), $p < .05$

To be more specific, there was no statistically significant correlation between extraverted personality type and learning achievement in lecture-based courses because the significance value was .74 which was greater than .05 ($r(105) = .03, p > .05$); also, there was no statistically significant correlation between extraverted personality type and learning achievement in practice-based courses because the significance value was .51 which was greater than .05 ($r(105) = .03, p > .05$). So there was no significant relationship between personality types and learning achievement in

the two different types of courses (lecture-based and practice-based courses).

Discussion

The study of Hudthasak and Ithipathanun (2004) found that there was a significant difference in personality of students who were in different schools in their university. Those who were in the same school shared the same personality type. The study of McCaulley (as cited in Wicklein & Rojewski, 1995) also stated that all students who were majoring in engineering had the same personality type when compared to students from other majors. The current study found that among 107 students, none of them were introverted. Ninety-seven percent was extraverted (104), and the remainder, 3% (3), was both introverted and extraverted. Even though the researcher expected to find introverted and extraverted personality types, it was not surprising that most of the respondents who were in the same department, school and university had the same personality type. It was also not surprising that almost all of students in the Department of Advertising were extraverted. Based on the researcher's experience, students in the Department of Advertising have to be confident in expressing their feelings and ideas. They have to be able to adapt themselves into every situation and these described characteristics are the characteristics of extraverted people (Brightman, 2003; Jung, 1923, 1991).

The results of learning achievement from both types of courses were similar. Both of them were in the same range of 70 – 80 percent. This result supported the findings of Heinström (2000) and, Wicklein and Rojewski (1995) that the personality type affected students' learning and achievement since the majority (97%) of respondents in the current study was extraverted, and the average scores they achieved were in the same range. However, to look deeper into details, the average score of lecture-based courses was 73.94 and the average score of practice-based courses was 77.77, so it meant that even though the scores from lecture-based and practice-based courses were in the same range of 70-80, there was a difference, albeit a small one. Extraverted students got a higher score in practice-based courses than in lecture-based courses. This result supported the study of application of Eysenck's theory (as cited in Schmeck & Lockhart, 1983) stated the extraverted type would learn and understand better in a stimulating environment, e.g., in a group discussion. That type of environment could be referred to as a practice-based course for the current study.

The current study found that there was no statistically significant correlation between personality type and learning achievement in either lecture-based or practice-based courses. This result, however, did not

appear to support the previous findings of many studies (see, e.g., Busato et al., 1998; Engleman et al., 2009; Heinström, 2000). Those studies found that personality of learners can affect learning strategies and learning styles, which eventually would affect the learning achievement or learning outcome. So this researcher expected to find a significant relationship between personality and learning achievement. However, such a relationship was not found possibly because the current study used a small group of respondents (107) from the same school and department while the studies from Busato et al. (1998), Engleman et al. (2009), and Heinström (2000) used larger groups of respondents which were drawn from different areas of expertise. Moreover, the contradiction may be related to the way the course types were categorized to be either lecture-based or practice-based courses, which has to be further studied in detail.

During critical review of all steps of the study, the researcher noticed that the personality type results might not be accurate since the results contradicted with the researcher's own experiences as a lecturer in the Department of Advertising. The fourth year students who were chosen to be the sample were the researcher's students, so the researcher had experience interacting with them. The researcher perceived that some of them were in an Asian culture and seemed to be introverted, but as presented in the Table 1 above, the results showed that none of the sample was introverted. This might be caused by the self-reported form survey, as stated in the limitations of the study, which allowed students to interpret and answer all questions by themselves.

The learning achievement variable of this study was all grades collected from 30 lecture-based courses and 11 practice-based courses. Each course had its objectives mentioned in the course outline so the grades can be measurable. The grading system also relies on a bell-curve distribution. So the learning achievement was objective, measurable and reliable. However, for some courses, given student numbers, there was more than one section, so in some courses there was more than one teacher responsible for teaching and grading. Therefore, the subjective factors of different teachers could be another possibility that affected the results.

There are several recommendations for additional research and further investigation. The first is to explore a larger group of samples who are studying in the same field of advertising or communication arts as this study, but from different universities. The second is the further classification of courses from different schools and departments since all schools and departments have credit structures to classify the types of courses as well. The third recommendation is to explore the other functions of an individual together

with the general attitudes since in the personality type theory of Jung, individuals are born with one general attitude, whether to be introverted orientation or extraverted, and one of the four functions (sensation, intuition, thinking or feeling) to be used with that orientation (Jung, 1923, 1991). In the MBTI, there are up to 16 types of personality. Fourth, to avoid the inaccuracy that might be an artifact of the self-reported survey, it is recommended that future researchers use an interview technique to ask the questions in the survey face to face. Finally, researchers should develop alternative ways to classify course types rather than use = the credit structure mode employed in this study.

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